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(58) Field of search
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(54) A ladder accessory

(57) A ladder accessory has a first support plate 4 and a second support plate 5 interconnected by brackets 6. The accessory can be clamped to the front side of a ladder 2 for use of the support plate 4 as a platform. Alternatively the accessory can be clamped to the back side of the ladder to hold the ladder away from a wall.

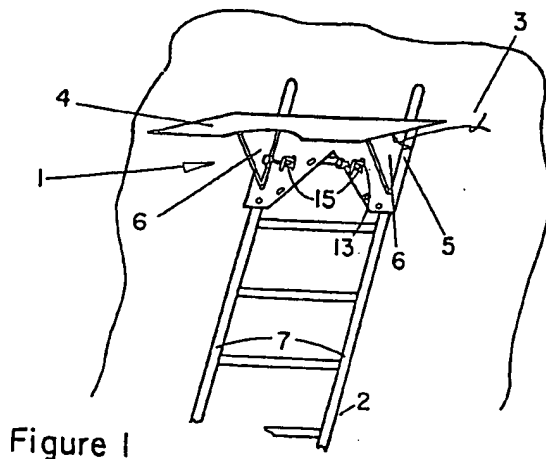


Figure 1

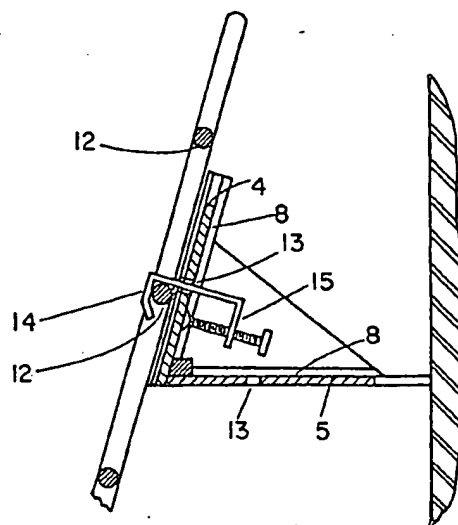


Figure 4

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1982.

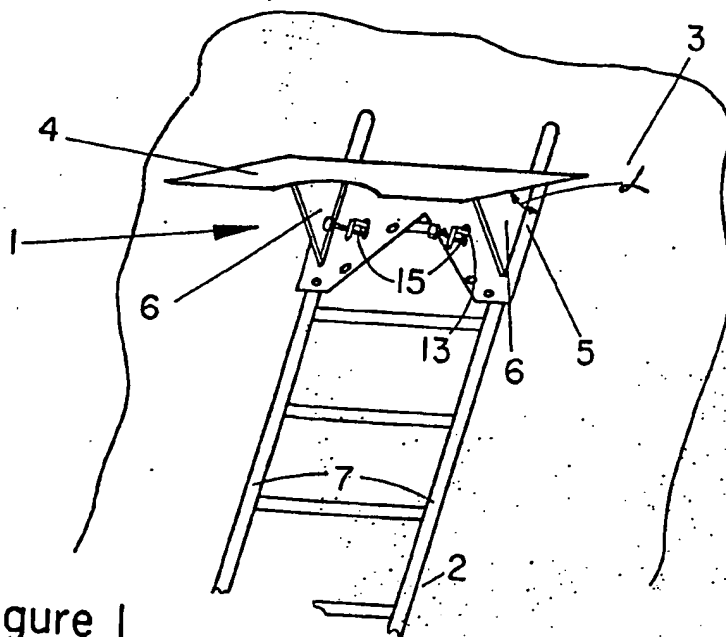


Figure 1

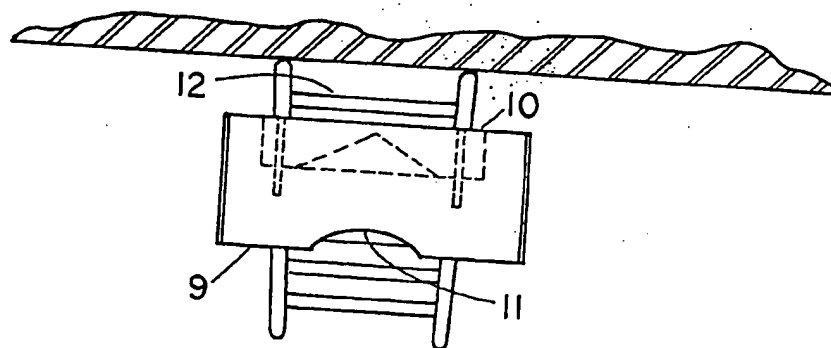


Figure 2

Figure 3

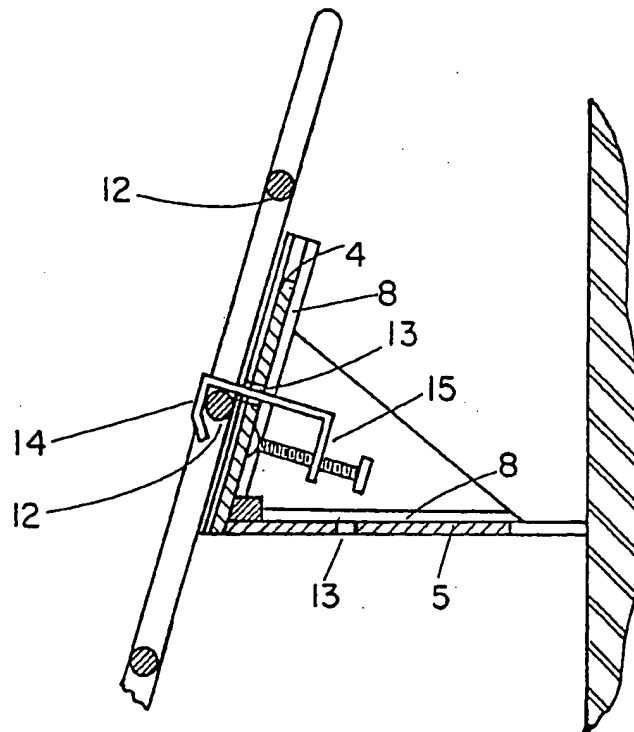
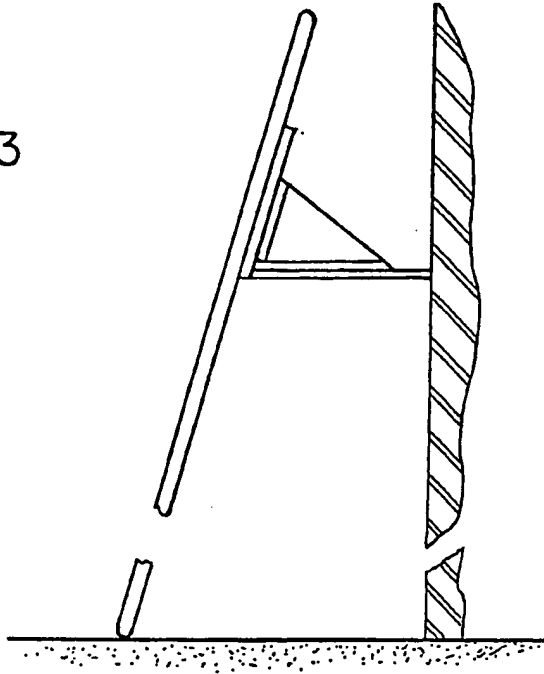


Figure 4

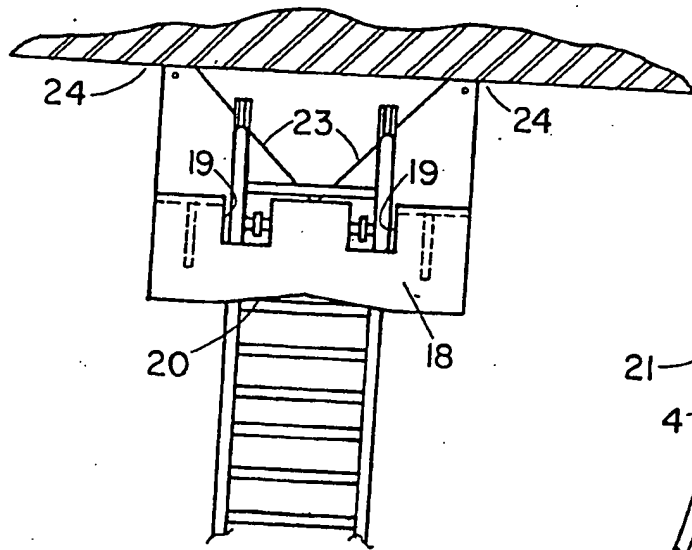


Figure 5a

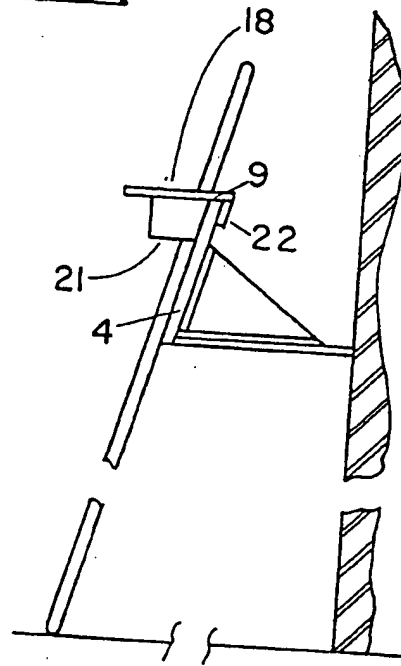


Figure 5b

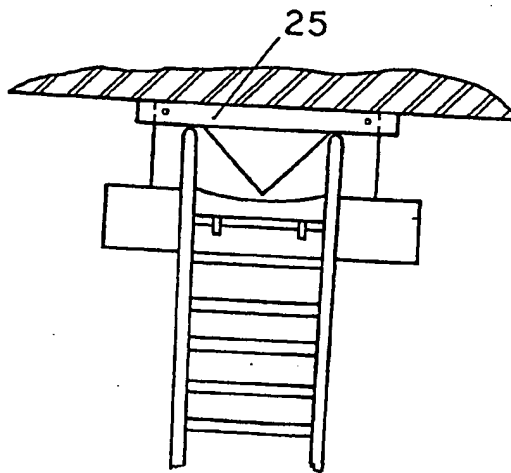


Figure 6a

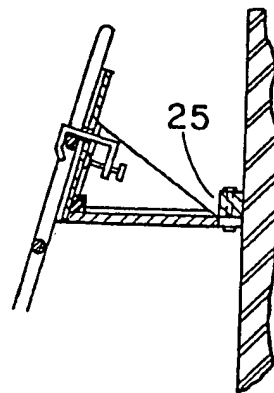


Figure 6b

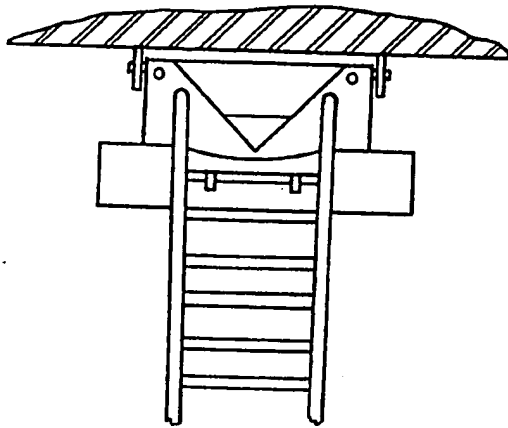


Figure 7a

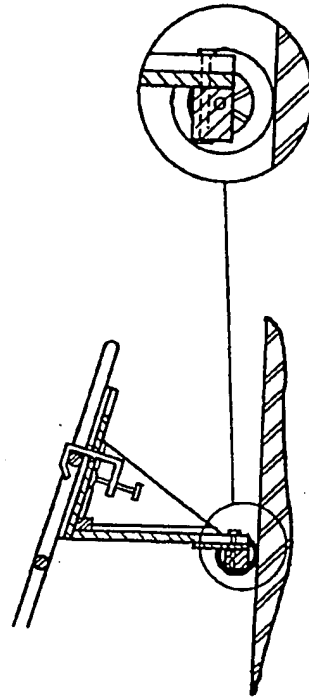


Figure 7b

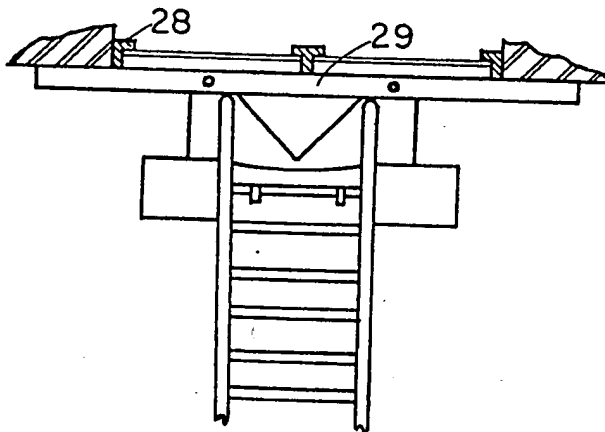


Figure 8a

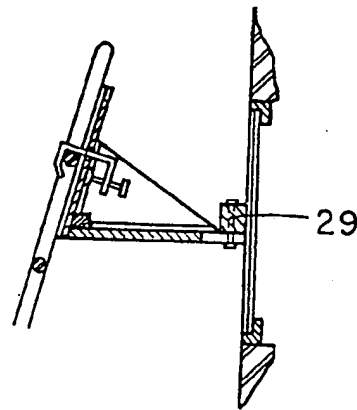


Figure 8b

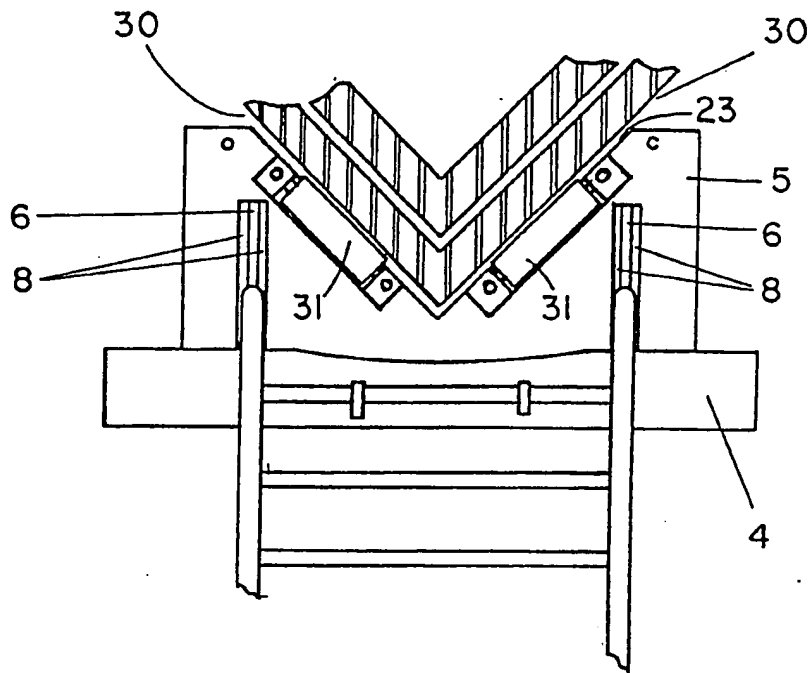


Figure 9

SPECIFICATION

Ladder accessory

The present invention relates to an accessory for a ladder.

- 5 Many decorating and repair jobs require the use of a ladder. However a ladder on its own has a number of restrictions on its usefulness. In particular, it requires a firm support from the wall against which it is to be laid. Also the support must be provided at the spacing of the ladder. These considerations in general mean that a ladder can only be supported around the edge of a window opening for instance. A further restriction is that the area of wall against which the ladder is supported is not easy to work on due to the proximity of the ladder. Another inconvenience is that the rungs of a ladder are not ideal for supporting tools and materials.

- 10 With such considerations in mind, the present invention has been made in a programme to improve the usefulness of ladders.

- 15 According to the invention there is provided a ladder accessory comprising a first support plate, a second support, at least one bracket for holding the support plates at a ladder angle with respect to each other, and means for clamping one of the support plates to a ladder.

- 20 As used herein the term "ladder angle" means an angle to the horizontal at which a ladder may be used. Without restricting the term to such range, ladder angles are typically between 70° and 80°, whilst British Standard Specification No. 11-79 recommends that a ladder should be used at 75° to the horizontal. It should be noted that if an accessory of the invention has its plates set at a certain angle, a ladder to which it is clamped may be used at another angle to the horizontal.

- 25 Preferably both support plates are to be clamped alternatively by the clamping means to the ladder. Also the clamping means is preferably such as to enable the accessory to be clamped to either the back/wall side of the ladder or to the front/user side of the ladder.

- 30 Two basic modes of use of the accessory are possible. In the first or "platform" mode, the accessory is clamped to the front/user side of the ladder at or close to the upper end thereof, with one support plate abutting the ladder and the other support plate being uppermost and extending substantially horizontally for use as a platform on which tools and materials may be placed. In the second or "abutment" mode, the accessory is clamped to the back/wall side of the ladder at or close to the upper end thereof, with one support plate abutting the ladder and the other support plate being lowermost and extending substantially horizontally towards the wall and conveniently into abutment with the wall. Thus the upper end of the ladder may be held away from the wall. The other support plate may be used as a platform on which tools and materials may be placed.

60 Conveniently, the support plates meet along a joint line, although it is possible for them to be interconnected merely at the bracket(s). The support

- 65 plates are preferably scalloped at their respective edges remote from the joint line. For the "platform" mode the scalloping of the uppermost support plate is conveniently shallow to enable a user to reach the wall on which he is working. For the abutment mode, the scalloping is preferably deep and in the form of a right angle V to enable the support plate to abut adjoining wall faces at a corner of a building. Possible wall engaging rollers may be provided at the V-scalloping to ease erection of the ladder. 70 Conveniently the first support plate has one form of scalloping, whilst the second support plate has the other form of scalloping.

- The support plates may be of a size merely to abut the rungs of the ladder in use. However they are preferably of a size to abut and extend laterally beyond the side members. To supplement the platform function of the support plate abutting the wall in the abutment mode, a removable platform member may be added, preferably to the upper end of the other support plate clamped to the back side of the ladder. Alternatively, the platform may be secured below and extend laterally from the wall-abutting the support plate in the abutment mode or be secured onto top of and extend laterally of the platform-providing support plate in the platform mode. 80

- 85 Removable wall-abutment members may be provided, for fitting to the wall-abutting support plate in the abutment mode. One such member may be of a length merely to bridge the V-scalloping. A second may be provided with wheels to ease erection of the ladder. A third may be of sufficient length to laterally span a window opening and thus enable the entire window frame to be painted without necessity to move the ladder, for instance. 90

- Two support brackets are preferably provided, to interconnect the two support plates at a spacing—of the brackets—equal to the standard spacing of the side members of the ladder. 95

- Although more complex arrangements may be envisaged, the clamping means preferably comprise a pair of G or C clamps extensible through a pair of support plate apertures to hook onto a rung whilst their screws engage the support plate concerned on its side opposite from the ladder. 100

- To help understanding of the invention, a specific embodiment thereof will now be described by way of example with reference to the accompanying drawings in which:— 105

Figure 1 is a perspective view of a ladder accessory of the invention in use in its platform mode,

Figure 2 is a plan view of the platform mode,

Figure 3 is a side view of the accessory in use in its wall-abutment mode,

Figure 4 is a cross-sectional side view similar to Figure 3 but on a larger scale and showing the clamping means,

- Figure 5a is a plan view of a platform member added in the abutment mode, 120

Figure 5b is a side view similar to Figure 3 showing the platform member,

Figure 6a is a plan view of a scalloping-bridging

wall-abutment member added in the wall-abutment mode.

Figure 6b is a cross-sectional side view showing the scalloping-bridging wall-abutment member,

5 Figure 7a is a plan view of a wall-abutment member provided with wheels in the wall-abutment mode,

Figure 7b is a cross-sectional side view showing the wheeled wall-abutment member,

10 Figure 8a is a plan view of a window-bridging wall-abutment member in the wall-abutment mode,

Figure 8b is a cross-sectional side view showing the window-bridging wall-abutment member and

Figure 9 is a plan view of an accessory of the invention in a wall-abutment mode at a corner of a building with added wall-abutment rollers engaging two wall faces.

Referring first to Figure 1, the ladder accessory 1 is shown clamped to the front of a ladder 2 leaning against a wall 3. The accessory has a first support plate 4 and a second support plate 5 interconnected by brackets 6 in alignment with the side members 7 of the ladder 1. As best shown in Figures 4 and 9, the brackets 6 have reinforcing members 8 on either side at the joints between the brackets and the support plates. The brackets and support plates are of marine quality plywood whilst the reinforcing members are of wood. The joints are glued and screwed.

30 The angle between the support plates 4, 5 is substantially the same as the angle to the horizontal at which the ladder 2 is leant against the wall 3, whereby the support plate 4 is substantially horizontal and may act as a platform for tools and building materials. The front edge 9 of the support plate 4, remote from the edge 10 at which it is joined to the support plate 5, is scalloped at 11 as best seen in Figure 2. The scalloping is provided to reduce impediment to the user caused by the support plate 4 acting as a platform.

Although in respect of a different mode of use, the clamping means is best seen in Figure 4 in conjunction with Figure 1. To assemble the accessory 1 to the ladder 2 for the platform mode, 45 the support plate 5 is laid against the front side of the ladder with—as shown—one rung 12 beyond the support-plate edge 10 at the end of the ladder which will be uppermost. Each support plate is provided with apertures 13 through which the free ends 14 of C clamps 15 are passed with the ends hooking behind the second rung 12' and pointing towards the other end of the ladder. If the clamps are always fitted in this manner regardless of the mode of use, even if they are not tightened fully the accessory remains hooked onto the ladder. Once the clamps are in position, tightening of them clamps the accessory to the ladder.

Figures 3 and 4 show the accessory fitted in the wall-abutment mode to the back side of the ladder. 60 The end of the ladder 16 is held away from the wall 3 by abutment of the support plate 5 with its edge 17 against the wall. Thus the portion of the wall immediately behind the ladder is more readily accessible. The support plate 5 may be used as a tools and material platform.

Turning now to Figures 5a and 5b, an additional platform member 18 can be seen added to the upper edge 9 of the support plate 4 for such tools and material. The member 18 has cutouts onto 19 to accommodate the ladder side members 7, and a slight scalloping at 20. It has reinforcing and anti-pivot supports 21 and a hook members 22 whereby it is self-supporting on the upper edge of support plate 4. Since the latter is at approximately 75° to the horizontal, stable support of the member 18 is enhanced.

To permit the support member 5 to abut a corner of a building as shown in Figure 9, it's deeply scalloped with a right angle V-shape 23. However this creates two concentrated load points 24 as shown in Figure 5a To spread the load as shown in Figures 6a and 6b, for instance on a brittle, e.g. tiled, wall, a wooden bar 25 may be bolted to the support plate 5 to bridge the V-scalloping 23.

85 Where the ladder requires continual movement, a similar bar 26 but equipped with wheels 27 may be bolted to the support plate 5, as shown in Figures 7a and 7b, in place of the bar 25.

90 Where a window frame 28 is to be painted, a long bar 29 may be used to allow the ladder to be centrally placed at the window. The bar spreads the load to the walls on both sides of the window frame, as shown in Figures 8a and 8b.

As noted above, Figure 9 shows the accessory in use at a corner between two wall faces 30. Two wall-engaging rollers 31 bearingly mounted in brackets removably secured on the support plate 5 are provided at the V-scalloping 23 to ease movement of the ladder up and down the building.

100 The invention is not intended to be restricted to the details of the above described embodiment. For instance, different materials, e.g. aluminium or plastic mouldings, may be used. Purpose designed clamps may be used.

105 The above described accessory may be noted to have the following advantages:—

- 1) facility for supporting tools and materials up a ladder,
- 2) facility for working on a wall against which a ladder is laid,
- 110 3) facility for spreading ladder load onto the wall,
- 4) facility for positioning a ladder centrally of a window,
- 115 5) facility for accessing two faces of a wall at one time, and
- 6) facility for raising and lowering a ladder without scraping of the ladder on the wall.

CLAIMS

120 1. A ladder accessory comprising a first support plate, a second support plate, at least one bracket for holding the support plates at a ladder angle with respect to each other and means for clamping one of the support plates to a ladder, the one of the support plates being adapted for such clamping.

125 2. A ladder accessory as claimed in claim 1 wherein both support plates are adapted to be clamped, alternatively, by the clamping means to the ladder.

3. A ladder accessory as claimed in claim 1 or claim 2 wherein the clamping means and the adaption of the one or each support plate is such that the accessory may be clamped either to the back/
- 5 wall side of the ladder with the other support plate being lowermost and extending from the ladder in an abutment mode or to the front/user side of the ladder with the other support plate being uppermost and extending from the ladder in a platform mode.
- 10 4. A ladder accessory as claimed in claim 1, claim 2 or claim 3 wherein the clamping means is a pair of C or G clamps and the adaption of the support plate or plates is a pair of apertures in the plate or plates.
- 15 5. A ladder accessory as claimed in any preceding claim wherein the support plates and the brackets are of wooden board, wooden reinforcing members being provided at joints between the brackets and the support plates.
- 20 6. A ladder accessory as claimed in any preceding claim wherein the support plates meet at a joint therebetween.
- 25 7. A ladder accessory as claimed in claim 6 wherein the support plates are scalloped at their respective edges remote from the joint therebetween.
8. A ladder accessory as claimed in claim 7 wherein the support plate which is uppermost in a platform mode is shallowly scalloped.
- 30 9. A ladder accessory as claimed in claim 7 or claim 8 wherein the support plate which is lowermost in an abutment mode is deeply scalloped and in the form of a substantially right angle V.
10. A ladder accessory as claimed in claim 9 wherein rollers for wall engaging are provided, preferably demountably, at the V-scalloping.
- 35 11. A ladder accessory as claimed in any preceding claim wherein the support member which is lowermost in an abutment mode is provided, preferably demountably, with an elongate wall-abutment member.
- 40 12. A ladder accessory as claimed in claim 11 wherein the elongate wall-abutment member is provided with wheels.
- 45 13. A ladder accessory as claimed in any preceding claim including a removable platform member adapted to clip onto the one, clampable, support plate when the other plate is in a wall-abutment mode.
- 50 14. A ladder accessory as claimed in any preceding claim wherein the one, clampable, support member or both members are of greater lateral extent than a standard ladder, whereby the one plate is clampable to the side members of the ladder with the clamping means being clampable
- 55 onto a rung of the ladder.
15. A ladder accessory as claimed in claim 14 wherein the brackets are provided at the standard spacing of the side members of the ladder.
- 60 16. A ladder accessory substantially as hereinbefore described with reference to Figures 1 to 4 of the accompanying drawings or as improved with reference to Figures 5a and 5b or Figures 6a and 6b or Figures 7a and 7b or Figures 8a and 8b or Figure 9 of the accompanying drawings.